


Sumaira Hasnain

Interleukin-22 suppresses major histocompatibility complex II in mucosal epithelial cells



Associate Professor Sumaira Hasnain earned her PhD in December 2010 from The University of Manchester UK, and currently holds the position of Associate Professor at the Mater Research Institute—University of Queensland. Leading a dynamic team of eight researchers, A/Prof Hasnain is at the forefront of groundbreaking research that explores the intersection of immunity and secretory cell function in the context of infections and chronic diseases. She was the first globally to demonstrate that immune responses can modulate protein production in secretory cells, paving the way for innovative therapeutic approaches.


A/Prof Hasnain's long-term vision is to characterise these novel immune factors and leverage them therapeutically through pre-clinical models of immune-driven pathologies. She is a holder of several patents for targeted immunotherapy in metabolic diseases, which has directly contributed to the establishment of Jetra Therapeutics, a spin-off company that has garnered venture capitalist funding.

Her research trajectory is marked by a prolific output of high-quality publications in prestigious journals, including *Nature Medicine*, *Nature Comms*, *Oncogene*, and *Gastroenterology*, showcasing her significant contributions to the field. A/Prof Hasnain has successfully secured over \$8 million in competitive funding and has received 19 awards to date, including recognition as an NHMRC L1 investigator.

In addition to her research achievements, A/Prof Hasnain is a staunch advocate for Equity, Diversity, and Inclusion (EDI) in STEM. She serves on the Australian STEM Equity Advocacy Team, the EDI Committee at Mater Research, and holds the position of Chair on the EDI Committee for the Australia and New Zealand Society for Immunology. Through her work, she is committed to fostering an inclusive and equitable environment for future generations of scientists.

Roland Ruscher


Compartmentalised persistence of unconventional intestine-resident CD8αα IEL throughout life



Dr. Roland Ruscher is an NHMRC Investigator/Emerging Leader Fellow and Group Leader at the Australian Institute of Tropical Health and Medicine/James Cook University (AITHM/JCU). He completed his PhD in immunology at The University of Queensland, followed by postdoctoral training at the University of Minnesota Center for Immunology. Roland returned to Australia in 2018, initially working in an industry setting before transitioning back into academia and establishing his own research group in 2022. His research program focusses on unravelling the fundamentals of the intestinal immune system, particularly the role of intestinal intraepithelial lymphocytes (IELs). These gut-resident immune cells are critical for maintaining barrier integrity and gut homeostasis, and play critical roles in inflammatory bowel disease (IBD) and bowel cancer. Roland's team currently investigates how IELs are impacted by early-life events, aging, and microbial exposure. In addition, Roland explores anti-inflammatory molecules shaped by the co-evolution between intestinal parasites and their mammalian hosts.

Valerie Verhasselt


A newborn's perspective on oral tolerance: implications for allergy prevention



Professor Verhasselt is the Director of the Larsson-Rosenquist Centre for Immunology and Breastfeeding at the University of Western Australia and the Telethon Kids Institute (Perth, Australia). Her research aims to understand how breastfeeding practices and milk bioactives influence immune development. The centre's research topics include health outcomes that are a burden in both high- and low-income countries, including allergies, malaria, worm infections and growth failure. This knowledge will inform maternal recommendations to increase the chances of disease prevention through breastfeeding and guide the development of preventive strategies tailored to the newborn.

Melcolm Starkey

Type 2 immunity in the urinary bladder




Dr Malcolm Starkey completed his PhD in Immunology and Microbiology at The University of Newcastle, Australia. He then undertook short-term post-doctoral training at the National Heart and Lung Institute, Imperial College, London, before returning to Australia as a National Health Medical Research Council Early Career Fellow (2014-17) and subsequently an Australian Research Council DECRA fellow (2018-20). He was recruited to Monash in July 2020 to establish his independent laboratory.

Malcolm currently leads the Urinary Tract Immunology & Microbiology Research Group in the Department of Immunology at the School of Translational Medicine at Monash University. He is also the Founding Director of the Bladder and Kidney Health Discovery Program at the Alfred Research Alliance.

Malcolm's team studies the immune system in the urinary tract. The primary interest of his research team is how microbial challenges predispose to chronic diseases with a specific focus on mucosal cytokines and type 2 immunity to develop immunotherapies for difficult-to-treat bacterial infections.

Páiraic Ó Cuív

Rationally Developed Precision Microbiome Therapeutics for the Treatment of Chronic Inflammatory Diseases



Dr. Páiraic Ó Cuív is the Vice President of Drug Discovery at Microba and an expert in gut microbiology and host-microbe interactions. Microba uses a proprietary database and a big-data approach to rationally identify candidate novel gut microbiome-derived therapeutics for the treatment of chronic inflammatory diseases. Dr. Ó Cuív's team have applied innovative approaches to "bring the microbiome to life" and to dissect the host-microbe interactions that underpin host health, with Microba's lead live biotherapeutic for the treatment of inflammatory bowel disease, MAP 315, recently successfully completing a Phase 1 trial.

Sam Forster

Characterising the site-specific regulatory role of the microbiome in inflammatory bowel disease symptoms



Associate Professor Sam Forster is a CSL Centenary Fellow leading the Microbiota and Systems Biology Laboratory at the Hudson Institute of Medical Research. Our research focuses on bringing together microbiology, computational biology and innate immunity to understand how to modify host-microbe interactions for therapeutic benefit. In 2019 A/Prof Sam Forster established and continues to manage the Australian Microbiome Culture Collection. He is also a co-founder of Biomebank that has become a world-leader in the development of rationally selected microbiome therapeutics and achieved world-first market authorisation for a microbiome-based therapeutic in 2022.

Nicola Harris


Mechanistic insight into diet based therapy for inflammatory bowel disease



Professor Nicola Harris completed her PhD in New Zealand then moved to Switzerland as a postdoctoral fellow in the lab of Nobel Laureate Rolf Zinkernagel, University of Zurich. In 2005 she joined the ETH Zurich as an Assistant Professor and in 2009 moved to EPFL, Lausanne. In 2012 she gained a prestigious ERC starting grant and was promoted to Associate Professor. In 2018 she moved to the Department of Immunology and Pathology, School of Translational Medicine, Monash University, where she is Co-leads the laboratory of Mucosal Immunology. Her laboratory studies type I intestinal immune responses with a particular focus on understanding their role in protection, physiology and wound repair/ tissue regeneration.

Ashley Mansell


Inflammasomes and inflammation - it's as easy as NLRP 1, to, 3



Associate Professor Ashley Mansell leads the Pattern Recognition Receptors and Inflammation laboratory at La Trobe University. His research focuses on Toll-like Receptors and Inflammasomes in the innate immune system. After earning his PhD at Trinity College Dublin, he returned to the Monash/Hudson Institute of Medical Research. There, he established an independent lab and provided evidence of cross-talk between innate signalling pathways, viral immunomodulation, and the structural and functional elements of PRR-induced inflammation. He discovered a new class of viral aggregating proteins that activate the NLRP3 inflammasome and identified new therapeutic opportunities to target inflammasome-mediated inflammation in inflammatory diseases. In 2020, he joined Adiso Therapeutics in Boston as Head of Translational Sciences, while maintaining his lab at Hudson Institute, to translate a novel inflammasome inhibitor. In 2024, he joined La Trobe University to continue his studies on inflammasomes and their role in mucosal immunity.

Simon Keely


Immune responses to spirochetes—a hidden aetiology of unexplained GI disease



Professor Keely graduated with a Ph.D. from University College Dublin. He undertook postdoctoral training at the Mucosal Inflammation Program in University of Colorado Denver. He is currently Professor and Head of Discipline of Immunology and Microbiology and in the School of Biomedical Science and Pharmacy, University of Newcastle. He established the Gastrointestinal Research Group at the Hunter Medical Research Institute (HMRI), where he is also currently Director of the HMRI Immune Health Program. Prof. Keely is a chief investigator in the NHMRC Centre of Research Excellence in Transforming Gut Health.

Marcus Geuking

Priming of microbiota-specific T cells protects from colitis




Professor Geuking completed his PhD in Immunology in the lab of Prof. Hans Hengartner and Nobel laureate Prof. Rolf Zinkernagel at the Institute of Experimental Immunology of the University Hospital Zurich and the Swiss Federal Institute of Technology (ETHZ, Zurich, Switzerland). During his PhD thesis he worked on understanding how antigen persistence, in the form donor cell microchimerism, promotes cytotoxic T cell (CTL) tolerance. Due to his continued interest in how persistent exposure to antigens impacts on the immune system, he joined the lab of Prof. Andrew Macpherson at McMaster University (Hamilton, Canada) for his postdoctoral studies to investigate how the immune system, T helper cells in particular, responds to colonization with intestinal commensal bacteria that form our microbiota. He demonstrated that colonization with benign commensal bacteria that are beneficial to the host results in the induction of intestinal regulatory T cells that are required to maintain immune homeostasis.

Following his postdoctoral fellowship, he joined the University of Bern (Switzerland) in 2010 as a research associate where he started to develop models to study the antigen-specific interaction between the intestinal microbiota and the immune system. As part of a large microbiome initiative, he was recruited to the University of Calgary (Canada) in 2016 where he established his own independent research group and is now a Professor in the Department of Microbiology, Immunology, and Infectious Diseases.

His group continues to work on the antigen-specific crosstalk between the microbiota and the immune system including how the microbiota impacts on systemic anti-commensal or anti-viral responses as well as the role of epitope mimicry. In addition, his group is also interested in better understanding how the maternal microbiome impacts on autoimmune disorders such as Type 1 diabetes or neurodevelopmental disorders.

Lisa Mielke


New immunotherapy strategies for treatment of colorectal cancer



Dr Lisa Mielke is Head of the Mucosal Immunity and Cancer laboratory at the Olivia Newton-John Cancer Research Institute. She is a Cancer Program Lead for the La Trobe Institute of Molecular Sciences at La Trobe University. Her research focuses on immune cell development and function in the gastrointestinal tract. She has led numerous studies revealing new interactions between our diet and transcriptional regulation of intestinal T cells. These studies opened an exciting frontier of research that underpin her current interest investigating immunity in colorectal cancer.

Kylie James


Mapping colocalising cells and bacteria of the colitic mucosa



Dr Kylie James is head of the Gut Immunogenomics Laboratory at the Garvan Institute of Medical Research and an NHMRC Emerging Leader Fellow. After completing a PhD at the University of Queensland in 2017, she undertook postdoctoral training at the Wellcome Sanger Institute in the laboratory of Dr Sarah Teichmann and a junior research fellowship at Christ's College, University of Cambridge. Here, she spearheaded the cell atlas of the human intestinal tract across anatomical space and developmental time. Kylie returned to Australia in 2021 to start her laboratory investigating the cellular and microbial contributions to intestinal disease using single-cell and spatially-resolved gene expression technologies.

Quan Nguyen


Spatial multiomics analysis of tissue microenvironment and cellular interactions in skin cancer



Associate Professor Quan Nguyen is the head of the Genomics and Machine Learning Lab at the QIMR Berghofer Medical Research Institute. He is leading the QIMRB National Centre for Spatial Tissue and AI Research (NCSTAR). He completed a PhD in Bioengineering at UQ in 2013, a postdoc in bioinformatics at RIKEN in Japan in 2015, a CSIRO OCE fellowship in 2016, an ARC DECRA Fellowship in 2021, and currently holds a NHMRC Emerging Leadership (EL2) Fellowship. His lab develops machine learning analysis of single-cell and spatial multiomics data to study disease progression and drug response. His machine-learning and technological approaches aim to bring the advanced molecular and cellular applications to more patients over the world.

Rhiannon Werder


Stem cell models to uncover antiviral immunity mechanisms in the alveolus



Dr Rhiannon Werder is a Team Leader at Murdoch Children's Research Institute leading a multidisciplinary team, combining expertise in stem cell biology and immunology, to develop new therapies for lung diseases. Her research centers around induced pluripotent stem cells to create models of the lung, spanning acute respiratory infections to chronic lung diseases. After completing her PhD in Mucosal Immunology at the University of Queensland, Dr Werder was awarded a NHMRC CJ Martin Fellowship to undertake postdoctoral training at the Center for Regenerative Medicine at Boston University. Her research has been recognised by prestigious awards including the Metcalf Prize for Stem Cell Research.

Tim Barnett


Understanding "Strep Throat" pathogenesis for better treatments and prevention strategies



Dr Tim Barnett completed his PhD at the University of Tasmania prior to embarking on postdoctoral studies at Emory University (Atlanta) and the University of Queensland (Brisbane). It was during this time, working with preeminent leaders in Group A *Streptococcus* genetics and pathogenesis, that he became fascinated by how this pathogen could cause such diverse diseases in different individuals. Tim's current work seeks to understand how and why Group A *Streptococcus* targets the tonsils during infection, and to use this information to develop new treatment and prevention strategies.

Rimma Goldberg


Cell Based Therapies for IBD



Dr Rimma Goldberg graduated from the University of Melbourne and completed Gastroenterology Training at St Vincent's Hospital and Monash Health. Following the completion of her training, Dr Goldberg undertook an Inflammatory Bowel Disease Fellowship at Guy's and St Thomas' NHS Trust and a PhD at King's College London. She has had extensive training in managing complex inflammatory bowel disease and functional gut disorders. During her PhD, Dr Goldberg worked on developing a novel cell based therapy for Crohn's Disease, which is currently being investigated in a clinical trial. This work has been presented at several national and international conferences, as well as winning multiple grants and awards. Dr Goldberg has published widely in peer reviewed journals. Dr Goldberg holds a consultant appointment at Monash Health. She is also a senior lecturer at Monash University, Department of Medicine, where she is head of the Cell Based and Regenerative Therapies group.

Ulrike Kappler

Three habits of highly successful pathogens – molecular details of long-term interactions between *Haemophilus influenzae* and human epithelia



Professor Ulrike Kappler is Group Leader in the School of Chemistry and Molecular Biosciences at UQ, and Chair of the Metals in Biology group. She held an ARC Australian Fellowship (2008-12) and has proven expertise in managing research projects funded by ARC & NHMRC project grants (~\$2.5 million) as well as funding from other agencies. Prof. Kappler has > 20 years experience in bacterial physiology and the investigation of enzyme function and metabolic pathways in a wide variety of bacteria, with a particular focus on bacterial sulfur metabolism. Over the past ~10 years she has developed an extensive program of research on the physiology and pathogenesis of the human respiratory pathogen *Haemophilus influenzae*. Her laboratory is investigating the role of *H. influenzae* metabolism for host-pathogen interactions, as well as molecular defences against antimicrobials produced by the human immune system. Her research has contributed to the development of a novel model of *H. influenzae* infection that is based on primary human nasal cells differentiated at Air-Liquid Interface.

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